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EXAMINER	
JEN, MINGJEN	
ART UNIT	PAPER NUMBER
3664	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/829,149	STILLER, ALEXANDER	
	Examiner	Art Unit	
	IAN JEN	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 4 - 16, 18,19,21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4 - 16, 18,19,21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/28/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment has been received on 12/06/2007

2. Claims 1, 4 - 16, 18, 19, 21 are pending in the application.

3. Claims 1, 18 have been amended

4. Claims 2,3,17,20 have been cancelled

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 9 – 14, 15 -16 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitsui (US Pat No 5100166).

As for claim 1, Mitsui shows a method for adjusting a damping coefficient of a spring strut of a vehicle (Abstract, Fig 1), the method comprising the steps of: damping spring strut with a first damping coefficient for a first wheel load (Fig 1, Col 4, lines 27- Col 5, lines 25; Col 6, lines 7- 14; Col 6, lines 37-44); measuring at least one of a longitudinal vehicle acceleration and transverse vehicle acceleration (Col 4, lines 10-25; Fig 2, vertical direction z, transverse direction x); determining a change of first wheel load from the vehicle acceleration (Col 4,

lines 10 – Col 5, lines 25); determining a second damping coefficient based on change of first wheel load so that the damping after change remains essentially constant (Col 4, lines 27- Col 5, lines 25; Col 6, lines 7- 14; Col 6, lines 37-44).

As for claim 4, Mitsui shows the method wherein the change of wheel load is detected by also considering an added load (Col 1, lines 20-27; Fig 1, Col 2, lines 44-53; Col 4 , lines 27-55 where damping coefficient which changes according to the change of wheel load, varies with respect to added load, auxiliary mass m).

As for claim 9, Mitsui shows the method wherein second damping coefficient is increased relative to first damping coefficient during an increase of wheel load essentially proportionally to the root from the increase of wheel load (Abstract, Col 4, lines 57- Col 5, lines 26).

As for claim 10, Mitsui shows the method of claim 1; second damping coefficient is increased relative to first damping coefficient during an increase of wheel load essentially proportionally to increase of wheel load (Fig 1, Col 1, lines 10-27; Col 4, lines 57 - Col 5, lines 26).

As for claim 11, Mitsui shows the method wherein second damping coefficient (Kd2) is computed as follows: Kd2=.xi..sub.1*2{square root}{square root over (Ks*(M1+.DELTA.M))}wherein: .xi..sub.1=damping of the spring strut; Ks=spring stiffness of

the spring strut; M1=first wheel load; and, DELTA.M=change of the wheel load. (Col 1, lines 25-27 where the change of the wheel load is integrated in to m, mass; c as Kd1 and Kd2).

As for claim 12, Mitsui shows the method wherein the control of the damping is carried out separately for each damper of the vehicle (Fig 2, Col 2, lines 53 - Col 3, lines 30).

As for claim 13, Mitsui shows the method comprising the further steps of: comparing the change of wheel load to a threshold value; and, changing the damping to improve the roadway-tire contact when change exceeds threshold value (Fig 7, Col 4, lines 27- 56; Col 5, lines 15 - 26).

As for claim 14, Mitsui shows the step of switching over method to a ground –hook method when threshold value is exceed (Col 4, lines 4- Col 5, lines 26, control circuit 22; Fig 10, Step 206,208).

As for claim 15, Mitsui shows the method comprising the further step of limiting a change of second damping coefficient relative to first damping coefficient by a maximum value with maximum value being dependent upon a speed of vehicle (Fig 8, Fig 9 where the damping coefficient, which are limited into hard, medium and soft range, are correlated to the velocity; Col 4, lines 27-56; Col 5, lines 15 - 26).

As for claim 16, Mitsui shows the method comprising the further step of increasing maximum value with increasing speed of vehicle (Fig 8, Fig 9 where the damping coefficient are correlated to acceleration; Col 5, lines 15 - 26).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5 - 8, 18, 19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsui (US Pat No 5100166) in view of Weiberle et al (US Pat Pub 2002/0013651).

As for claim 5, Mitsui does not show a slope inclination angle is considered in the detection of change of wheel load.

Weiberle et al shows the method wherein a slope inclination angle is considered in the detection of change of wheel load (Abstract; Fig 2; Fig 5; Fig 6, Step 320, Step 330; Para 0017, Para 0021, Para 0075).

It would have been obvious for one of ordinary skill in the art to apply Newton's law along with static free body diagram with angle measurement, as taught by Weiberle et al, to Mitsui in order to obtain correct wheel load measurement.

As for claim 6, Mitsui does not show the method the detection of change of wheel load takes place by measuring a wheel contact force.

Weiberle et al shows the method the detection of change of wheel load takes place by measuring a wheel contact force (Abstract; Fig 2; Fig 5; Fig 6, Step 320, Step 330; Fig 5, Step 240; Para 0017, Para 0021, Para 0075, Para 0076).

It would have been obvious for one of ordinary skill in the art to apply Newton's law along with wheel contacting force, as taught by Weiberle et al, to Mitsui in order to obtain correct wheel contact force measurement.

As for claim 7, Mitsui does not show the measurement of the wheel contact force takes place by measuring an air spring pressure of a damper and an elevation distance between a vehicle axle and the bodywork.

Weiberle et al shows the method of wherein the measurement of the wheel contact force takes place by measuring an air spring pressure of a damper and an elevation distance between a vehicle axle and the bodywork. (Abstract; Fig 2; Fig 5; Fig 6, Step 320, Step 330; Fig 5, Step 240; Para 0017, Para 0021, Para 0075, Para 0076-0101).

It would have been obvious for one of ordinary skill in the art to apply Newton's law and static free body diagram, as taught by Weiberle et al, to Mitsui in order to obtain correct air spring pressure and elevation distance.

As for claim 8, Mitsui does not show quantities, which are required for the detection of a change of wheel load, are made available via a bus system.

Weiberle et al shows the method wherein quantities, which are required for the detection of a change of wheel load, are made available via a bus system (Fig 4, Para 0019; Para 0131; Para 0133-0139 where the quantities are interconnected with each other, which is bus system).

It would have been obvious for one of ordinary skill in the art to apply interconnection between sub control systems, as taught by Weiberle et al, to Mitsui in order to obtain and share correct and real time data values for the whole vehicle.

As for claim 18, Mitsui shows a control system for controlling a damping for a spring strut of a vehicle, the control system comprising: means for computing a damping coefficient (Kd2) based on a change of a wheel load so that the damping remains essentially unchanged after the change of wheel load (Col 1, lines 10-35; Col 4, lines 10 – Col 5, lines 35; Fig 10, Step 210) ; further comprising means for measuring a vehicle acceleration in at least one of longitudinal and transverse direction (Col 4, lines 10-25; Fig 2, vertical direction z, transverse direction x) , means for computing damping coefficient being so configured that a change of wheel load is determined from the acceleration data (Col 4, 4, lines 10 – 55; Fig 1, Acceleration sensor 21); and, means for outputting an actuating quantity for a damper to adjust damping coefficient (Col 4, lines 27- Col 5, lines 25; Col 6, lines 7- 14; Col 6, lines 37-44; Col 3, lines 65 -Col 4, lines 2; Col 4 lines 57 - Col 5, lines 26; Col 6, lines 37-44).

As for claim 19, Mitsui shows means for computing the damping coefficient (Col 4, lines 57 - Col 5, lines 26).However, Mitsui does not show the control system is configured for access to a data bus. Weiberle et al shows the control system is configured for access to a data bus in

order to access data (Fig 4, Para 0019; Para 0131; Para 0133-0139 where the quantities are interconnected with each other, which is bus system).

It would have been obvious for one of ordinary skill in the art to apply interconnect between sub control systems, as taught by Weiberle et al, to Mitsui in order to obtain and share correct and real time data values for the whole vehicle.

As for claim 21, Mitsui shows the control system of claim 18, further comprising a ground-hook control module and a comparator for comparing the change of the wheel load to a threshold value (Col 4, lines 27- Col 5, lines 15; Fig 19, Step 208; Vibration detecting device 21); and, means for switching over to ground-hook control module when threshold value is exceeded (Col 4, lines 4- Col 5, lines 26, control circuit 22; Fig 10, Step 206,208).

Response to Arguments

5. Applicant's arguments filed on 12/06/2007 have been fully considered but they are not persuasive.

6. Applicant argues the accelerations measured by Mitsui are individual wheel accelerations, not vehicle acceleration. The acceleration for each of the wheels are measured by a vibration detecting device 21 in order to determine vibration to be damped and individual wheel acceleration may accelerate in different direction and the measured quantity of Mitsui and present application is different as well as their potential use.

Examiner respectfully disagrees with applicant's argument. In order to determined vehicle acceleration, the acceleration of wheel must be measured. Without wheel acceleration, vehicle acceleration would not exist. Furthermore, even individual wheels accelerates toward different direction, the accelerate rate for each wheel respect to a single vehicle should be the same. For otherwise, there would have multiple acceleration rate coexisted simultaneously at a single time toward a single vehicle.

The both acceleration measurements for Mitsui and present invention are utilized to decide and adjust the damping factor and damping ratio and therefore are same in potential use.

7. Applicant argues vehicle acceleration is not suitable to determine wheel vibration. Mitsui shows vehicle acceleration is used to determined wheel vibration. Please see Col 4, lines 10 – Col 5, lines 25.

Conclusion

1. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IAN JEN whose telephone number is (571)270-3274. The examiner can normally be reached on Monday - Friday 9:00-6:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ian Jen/
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